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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,634	07/11/2003	Yoshihiro Hara	15162/05580	4269
24367	7590	03/03/2005	EXAMINER	
SIDLEY AUSTIN BROWN & WOOD LLP 717 NORTH HARWOOD SUITE 3400 DALLAS, TX 75201				PERKEY, WILLIAM B
ART UNIT		PAPER NUMBER		
		2851		

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/617,634	HARA, YOSHIHIRO	
	Examiner William B. Perkey	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 20 September 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 19-43 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 19-43 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 09-20-04.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

1. This application has been withdrawn from issue and prosecution on the merits is reopened in light of applicant's Information Disclosure Statement filed September 20, 2004.

Applicant is advised that the Notice of Allowance mailed July 19, 2004 is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 19, 21, 34-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka (U.S. Patent No. 5,539,268) in view of Sugaya et al. (U.S. Patent No. 5,870,634).

Kataoka discloses a position detector that outputs a present position Co from counter 13 in Fig. 1; a driver is shown as 11 and 12 in Fig. 1; and a position servo controller is shown as CPU 14 in Fig. 1 or in detail in Fig. 2, which sets a basic driving frequency Fs and controls the non-frequency parameter Ps based on a difference between the present position Co and the control target position TP. Thus, Kataoka shows the claimed invention, except for a calculator that calculates the control target position. Sugaya discloses a camera shake correction system

that uses an angular velocity sensor to determine the amount of camera shake and finds the difference from the detected position of the shake compensation lens to drive the ultrasonic motor displacing the lens to a desired target position in Fig. 10. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the vibration type actuator device of Kataoka in a camera shake compensation system using an angular velocity sensor to calculate the amount of camera shake. The calculated amount of camera shake is used as the target position fed into the element 25 in Fig. 2 of Kataoka. A duty cycle ratio is disclosed as the pulse width command Ps in column 3 lines 52-55 of Kataoka. The limit element 22 maintains the driving frequency within a predetermined frequency range. The amount of camera shake detection circuit may be constructed using a microprocessor which would calculate the target position on periodic basis or could be an analog circuit which continuously outputs a target position.

4. Claims 20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to the claims above, and further in view of Hayashi et al. (U.S. Patent No. 6,812,618 B2).

The references as applied in numbered paragraph 3, above, shows the claimed invention, except for the non-frequency parameter as a voltage value of the drive signal; or using a look up table to determine the value of the non-frequency parameter. Hayashi discloses a vibration type actuator that uses a look up table to determine desired driving frequency  $f$  of the actuator and the pulse width parameter PW according to the desired speed VC determined from a difference between the target position and the detected position of the movable member in the embodiment of Fig. 1 (see the paragraph bridging columns 4 and 5); or in the embodiment of Fig. 9 the non-

frequency parameter is disclosed as a voltage value. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to substitute look up tables for the circuit components of Kataoka to determine the parameters Ps and Fs from the desired speed Vd in order to obtain the desirable feature of speeding up the processing time. It would have been obvious to one of ordinary skill in the art to vary the voltage to the driving circuit of Kataoka instead of the pulse width Ps in order to obtain a desirable alternative.

5. Claims 19-23 and 34-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (U.S. Patent No. 6,812,618 B2) in view of Sugaya et al. (U.S. Patent No. 5,870,634).

Hayashi shows a position detector 5 in Fig. 1; a driver 6; and a position servo controller 2-4 which sets a basic frequency f and controls a non-frequency parameter PW based on a difference between the present position P and the control target position. Thus, Hayashi shows the claimed invention except for a calculator which calculates the control target position. Sugaya discloses a camera shake correction system that uses an angular velocity sensor to determine the amount of camera shake and finds the difference from the detected position of the shake compensation lens to drive the ultrasonic motor displacing the lens to a desired target position in Fig. 10. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the vibration type actuator device of Hayashi in a camera shake compensation system using an angular velocity sensor to calculate the amount of camera shake. The amount of camera shake used as the target position data of Hayashi. The non-frequency parameter is a voltage DCV in the embodiment of Fig. 9. The paragraph bridging columns 4 and 5 discloses that look up tables are used to determine the basic driving frequency and the non-frequency parameter.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 19 above in numbered paragraph 3 or 5, and further in view of Senda et al. (U.S. Patent No. 6,437,481 B2).

The rejections as set forth in numbered paragraphs 3 and 5 above, meet the claimed invention except for ambient temperature correction of the basic driving frequency. Senda et al. discloses a graph in Fig. 2 showing how the speed/frequency plot of a vibration type motor changes with temperature. Senda et al. discloses the use of a look up table to effect temperature compensation. It would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to provide temperature compensation to the driving frequency in either the primary reference Kataoka or Hayashi in order to achieve a more precise motor control under varying temperature conditions.

7. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied in numbered paragraphs 3 or 5 above, and further in view of Yoshida et al. (U.S. Patent No. 6,512,321 B2).

The rejection in numbered paragraph 3 or 5, above, meets the claimed invention except for the ultrasonic actuator having frequency-speed characteristics that the speed is set at a substantially constant value in a predetermined frequency range; or except for setting the drive frequency lower than a complete resonant frequency. Yoshida et al. discloses a focus lens that is position adjusted using an ultrasonic motor. The ultrasonic motor of Yoshida et al. is of the same type motor structure as the actuator shown by applicant. Yoshida et al. discloses similar frequency/speed plots to applicant and also discloses that the drive frequency is controlled over the same range as applicant, including below the complete resonant frequency. It would have

been obvious to one of ordinary skill in the art, at the time of applicant's invention, to use a vibration motor of the type shown by Yoshida et al. controlled by the control circuit of either Kataoka or Hayashi in order to obtain a desired alternative vibration actuator. Of course, using the actuator type of Yoshida et al., the control circuitry of either Kataoka or Hayashi may control the drive frequency anywhere within the driving frequency range disclosed by Yoshida et al.

#### **Telephone Numbers**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William B. Perkey whose telephone number is (571) 272-2126. The examiner can normally be reached on Monday-Thursday 7:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William B. Perkey  
Primary Examiner  
Art Unit 2851